

AMENDMENTS TO THE CLAIMS

Claims 1, 3-10, and 17-79 are pending. Claims 1, 32, 51-52, and 63-64 are amended. Claims 2 and 11-16 were cancelled without prejudice or disclaimer, and claims 80-83 were withdrawn from consideration. The remaining claims are unchanged.

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1 1. (Currently Amended) A method for routing application-level messages from one or more
2 sending services to one or more recipient services across a message interchange network, said
3 message interchange network being built on an open platform overlaying a public network,
4 wherein at least some of the one or more sending services and the one or more recipient services
5 are managed by different organizational entities, and wherein each sending service and recipient
6 service is accessible according to properties and permissions associated with each of the sending
7 services and recipient services, comprising:

8 (a) receiving **[[a]]** an application-level message from a sending service, said application-
9 level message including a header element and at least one of: a body element including one or
10 more documents that a sending service is sending to a recipient service, and an attachment
11 including one or more documents that a sending service is sending to a recipient service;

12 (b) determining a route path for delivery of said **application-level** message to **said** one or
13 more recipient services, said route path including one or more in-transit services, wherein said
14 determining being based on one or more of: a reference to a service identified in said header
15 element, a routing script defined by a sending service, a routing script defined by a recipient
16 service, and a routing script defined by an in-transit service; and

17 (c) delivering said message to an in-transit service in said route path, wherein said in-
18 transit service performs an identifiable operation on said message as said message travels from a
19 sending service to a recipient service, the identifiable operation altering the content of the
20 message to ensure that the message has the proper **format for features required by** the recipient
21 service.

1 2. (Cancelled)

1 3. (Previously Presented) The message routing method of claim 1, wherein said header

2 element is an extensible markup language header element.

1 4. (Previously Presented) The message routing method of claim 1, wherein said one or more
2 documents in said body element and said one or more documents in said attachment can
3 accommodate any type of data.

1 5. (Original) The message routing method of claim 4, wherein said data includes extensible
2 markup language data.

1 6. (Original) The message routing method of claim 4, wherein said data includes text data.

1 7. (Original) The message routing method of claim 4, wherein said data includes binary data.

1 8. (Previously Presented) The message routing method of claim 1, wherein said message
2 further includes routing and route trace elements.

1 9. (Original) The message routing method of claim 1, wherein said receiving is based on the
2 Simple Object Access Protocol.

1 10. (Original) The message routing method of claim 1, wherein said receiving includes
2 receiving said message from a party that sends said message on behalf of a sender.

1 11. (Cancelled)

1 12. (Canceled)

1 13. (Canceled)

1 14. (Canceled)

1 15. (Canceled)

1 16. (Canceled)

1 17. (Previously Presented) The message routing method of claim 1, wherein said determining

2 is recursive.

1 18. (Previously Presented) The message routing method of claim 1, wherein said determining
2 occurs prior to physical delivery of said message.

1 19. (Previously Presented) The message routing method of claim 1, wherein said determining
2 occurs dynamically during logical and physical delivery of said message.

1 20. (Previously Presented) The message routing method of claim 1, wherein a routing script
2 defines a procedure that determines an existence of one or more attributes of the message.

1 21. (Previously Presented) The message routing method of claim 1, wherein a routing script
2 defines a procedure based on pattern matching.

1 22. (Previously Presented) The message routing method of claim 1, wherein a routing script
2 defines a procedure that compares one or more attributes of a message to a reference value.

1 23. (Previously Presented) The message routing method of claim 1, wherein a routing script is
2 based on a routing rule, said routing rule including a condition and one or more actions.

1 24. (Original) The message routing method of claim 23, wherein said condition is one of an
2 equals, not-equals, equals-one-of, less-than, greater-than, and exists operators.

1 25. (Original) The message routing method of claim 23, wherein said condition is a
2 combination of one or more conditions.

1 26. (Original) The message routing method of claim 25, wherein said one or more conditions
2 are combined using one or more of an AND, OR, XOR, and NOT operators.

1 27. (Original) The message routing method of claim 1, wherein said delivering includes
2 pushing said message to said in-transit service.

1 28. (Original) The message routing method of claim 1, wherein said delivering includes
2 delivering said message upon a polling action by said in-transit service.

1 29. (Original) The message routing method of claim 1, wherein said delivering includes
2 delivering said message to said in-transit service for one of a data transformation operation, an
3 enrichment operation, a cross-reference ID mapping operation, a filtering operation, and a credit
4 scoring operation.

1 30. (Original) The message routing method of claim 1, further comprising logging usage,
2 status, and billing information after processing said message.

1 31. (Original) The message routing method of claim 1, further comprising delivering said
2 message to said recipient service after said message has been routed to all in-transit services in
3 said route path.

1 32. (Currently Amended) A message routing system, comprising:

2 a message routing network built on an open platform overlaying a public network, said
3 message routing network enabling routing of application-level messages between a sending
4 service and one or more recipient services, wherein at least some of the one or more sending
5 services and the one or more recipient services are managed by different organizational entities,
6 said message routing network further enabling inclusion of a plurality of in-transit services into
7 said message routing network, wherein an in-transit service can be selectively included in a
8 routing for a message based upon an identifiable type of processing that said in-transit service
9 can perform on said message, **a route path defining delivery of said message to said one or**
10 **more recipient services, said route path including one or more of the in-transit services,**
11 **said route path determined based on one or more of: a reference to a service identified in a**
12 **header element of a message, a routing script defined by a sending service, a routing script**
13 **defined by a recipient service, and a routing script defined by an in-transit service.**

1 33. (Original) The message routing system of claim 32, wherein said in-transit service
2 performs one of a data transformation operation, an enrichment operation, a cross-reference ID
3 mapping operation, a filtering operation, and a credit scoring operation.

1 34. (Original) The message routing system of claim 32, wherein an in-transit service is
2 included in said routing based on a routing script.

1 35. (Original) The message routing system of claim 34, wherein said routing script is defined

2 by a sending service.

1 36. (Original) The message routing system of claim 34, wherein said routing script is defined
2 by a recipient service.

1 37. (Original) The message routing system of claim 34, wherein said routing script is defined
2 by an in-transit service.

1 38. (Original) The message routing system of claim 34, wherein said routing is defined by a
2 sending service, a recipient service, and at least one in-transit service.

1 39. (Original) The message routing system of claim 34, wherein said routing is determined
2 recursively.

1 40. (Original) The message routing system of claim 34, wherein said routing is determined
2 prior to physical delivery of said message.

1 41. (Original) The message routing system of claim 34, wherein said routing is determined
2 during logical and physical delivery of said message.

1 42. (Original) The message routing system of claim 34, wherein a routing script defines a
2 procedure that determines an existence of one or more attributes of the message.

1 43. (Original) The message routing system of claim 34, wherein a routing script defines a
2 procedure based on pattern matching.

1 44. (Original) The message routing system of claim 34, wherein a routing script defines a
2 procedure that compares one or more attributes of a message to a reference value.

1 45. (Original) The message routing system of claim 34, wherein a routing script is based on a
2 routing rule, said routing rule including a condition and one or more actions.

1 46. (Original) The message routing system of claim 45, wherein said condition is one of an
2 equals, not-equals, equals-one-of, less-than, greater-than, and exists operators.

1 47. (Original) The message routing system of claim 45, wherein said condition is a
2 combination of one or more conditions.

1 48. (Original) The message routing system of claim 47, wherein said one or more conditions
2 are combined using one or more of an AND, OR, XOR, and NOT operators.

1 49. (Original) The message routing system of claim 32, wherein said message routing network
2 provides a transport level messaging service.

1 50. (Original) The message routing system of claim 32, wherein said message is delivered to
2 said recipient service after said message has been routed to all in-transit services in said route
3 path.

1 51. (Currently Amended) A computer program product, stored on a machine-readable
2 medium, for routing application-level messages from one or more sending services to one or
3 more recipient services across a message interchange network, said message interchange network
4 being built on an open platform overlaying a public network, wherein at least some of the one or
5 more sending services and the one or more recipient services are managed by different
6 organizational entities, and wherein each sending service and recipient service is accessible
7 according to properties and permissions associated with each of the sending services and
8 recipient services, comprising instructions operable to cause a computer to:

9 receive an application-level message from a sending service, said application-level
10 message including a header element and at least one of: a body element including one or more
11 documents that a sending service is sending to a recipient service, and an attachment including
12 one or more documents that a sending service is sending to a recipient service;

13 determine a route path for delivery of said application-level message to said one or more
14 recipient services, said route path including one or more in-transit services, wherein said
15 determining being based on one or more of: a reference to a service identified in said header
16 element, a routing script defined by a sending service, a routing script defined by a recipient
17 service, and a routing script defined by an in-transit service; and

18 deliver said message to an in-transit service in said route path, wherein said in-transit
19 service has been created to perform an identifiable operation on said message as said message
20 travels from a sending service to a recipient service, the identifiable operation altering the
21 content of the message to ensure that the message has the proper format for features required

22 ~~by~~ the recipient service.

1 52. (Currently Amended) A message routing network method, comprising:

2 (a) receiving a registration request from a service for inclusion in a message routing
3 network, said message routing network being built on an open platform overlaying a public
4 network, said service being operative to provide a data operation according to properties and
5 permissions associated with said service; ~~{{and}}~~

6 (b) including said service in a directory of services, said directory of services enabling
7 users of said message routing network to define at least a portion of a desired data processing on
8 an application-level message; **and**

9 **(c) determining a route path for delivery of a message to one or more recipient**
10 **services, said route path including one or more in-transit services, said determining being**
11 **based on one or more of: a reference to a service identified in a header element, a routing**
12 **script defined by a sending service, a routing script defined by a recipient service, and a**
13 **routing script defined by an in-transit service.**

1 53. (Original) The message routing network method of claim 52, wherein said service
2 provides a data transformation service.

1 54. (Original) The message routing network method of claim 52, wherein said service
2 provides a data enrichment service.

1 55. (Original) The message routing network method of claim 52, wherein said service
2 provides a cross-reference service.

1 56. (Original) The message routing network method of claim 52, wherein said service
2 provides a filtering service.

1 57. (Original) The message routing network method of claim 52, wherein said service
2 provides a credit scoring service.

1 58. (Original) The message routing network method of claim 52, wherein a service is selected
2 from said directory of services by a sending service.

1 59. (Original) The message routing network method of claim 52, wherein a service is selected

2 from said directory of services by a recipient service.

1 60. (Original) The message routing network method of claim 52, wherein a service is selected
2 from said directory of service engines by an in-transit service.

1 61. (Original) The message routing network method of claim 52, further comprising storing a
2 script defined by one of a sending service, a recipient service, and an in-transit service, said
3 script mapping an invocation of a first service to an invocation of a second service, wherein
4 contexts of said invocations are managed by said message routing network.

1 62. (Original) The message routing network method of claim 61, wherein said script defines a
2 procedure for enabling determination of at least part of a routing of a message between services.

1 63. (Currently Amended) A computer program product, stored on a machine-readable
2 medium, comprising instructions operable to cause a computer to:

3 receive a registration request from a service for inclusion in a message routing network,
4 said message routing network being built on an open platform overlaying a public network, said
5 service being operative to provide a data operation according to properties and permissions
6 associated with said service; ~~and~~

7 include said service in a directory of services, said directory of services enabling users of
8 said message routing network to define at least a portion of a desired data processing on an
9 application-level message; and

10 determine a route path for delivery of a message to one or more recipient services,
11 said route path including one or more in-transit services, said determining being based on
12 one or more of: a reference to a service identified in a header element, a routing script
13 defined by a sending service, a routing script defined by a recipient service, and a routing
14 script defined by an in-transit service.

1 64. (Currently Amended) A message routing system, comprising:

2 a message routing network having an interface that enables a plurality of services to post
3 application-level messages to and receive application-level messages from said message routing
4 network, said message routing network being built on an open platform overlaying a public
5 network, wherein at least some of the one or more sending services and the one or more recipient
6 services are managed by different organizational entities, and wherein each sending service and

7 recipient service is accessible according to properties and permissions associated with each of
8 the sending services and recipient services, at least a portion of said plurality of services
9 providing a menu of data operations that can be selectively applied to an application-level
10 message traversing said message routing network, a route path defining delivery of a message
11 to said one or more recipient services, said route path including one or more in-transit
12 services, said route path determined based on one or more of: a reference to a service
13 identified in a header element of a message, a routing script defined by a sending service, a
14 routing script defined by a recipient service, and a routing script defined by an in-transit
15 service.

1 65. (Original) The message routing system of claim 64, wherein said message routing network
2 provides a transport level messaging service.

1 66. (Original) The message routing system of claim 65, wherein said message routing network
2 is implemented on a public network.

1 67. (Original) The message routing system of claim 64, wherein said plurality of services
2 includes a service that provides a data transformation service.

1 68. (Original) The message routing system of claim 64, wherein said plurality of services
2 includes a service that provides a data enrichment service.

1 69. (Original) The message routing system of claim 64, wherein said plurality of services
2 includes a service that provides a cross-reference service.

1 70. (Original) The message routing system of claim 64, wherein said plurality of services
2 includes a service that provides a filtering service.

1 71. (Original) The message routing system of claim 64, wherein said plurality of services
2 includes a service that provides a credit scoring service.

1 72. (Original) The message routing system of claim 64, wherein a service is selected by a
2 sending service.

1 73. (Original) The message routing system of claim 64, wherein a service is selected by a

2 recipient service.

1 74. (Original) The message routing system of claim 64, wherein a service is selected by an in-
2 transit service.

1 75. (Original) The message routing system of claim 64, wherein said interface uses the Simple
2 Object Access Protocol.

1 76. (Original) The message routing system of claim 64, wherein a service is selectively
2 applied based on a routing script.

1 77. (Original) The message routing system of claim 76, wherein said routing script maps an
2 invocation of a first service to an invocation of a second service, wherein contexts of said
3 invocations are managed by said message routing network.

1 78. (Original) The message routing system of claim 76, wherein said script defines a
2 procedure for enabling determination of at least part of a routing of a message between services.

1 79. (Original) The message routing system of claim 76, wherein said routing script is defined
2 by one of a sending service, a recipient service, and an in-transit service.

1 80. (Withdrawn) A message routing system, comprising:
2 a message routing network that enables message routing between a plurality of services,
3 wherein each service provides a data operation that is applied to a message traversing said
4 routing, wherein said message routing network generates a bill for at least part of said message
5 routing based on usage of individual services.

1 81. (Withdrawn) The message routing system of claim 80, wherein said bill is generated
2 through an analysis of invocations of said plurality of services.

1 82. (Withdrawn) The message routing system of claim 80, wherein said bill is based on
2 message size.

1 83. (Withdrawn) The message routing system of claim 80, wherein said bill is determined on
2 a per transaction basis.